Casual Friday Series

Mechanics of Optimal Thyroid Function II

A BIOGENETIX CLINICAL PRESENTATION

biogenetix.com

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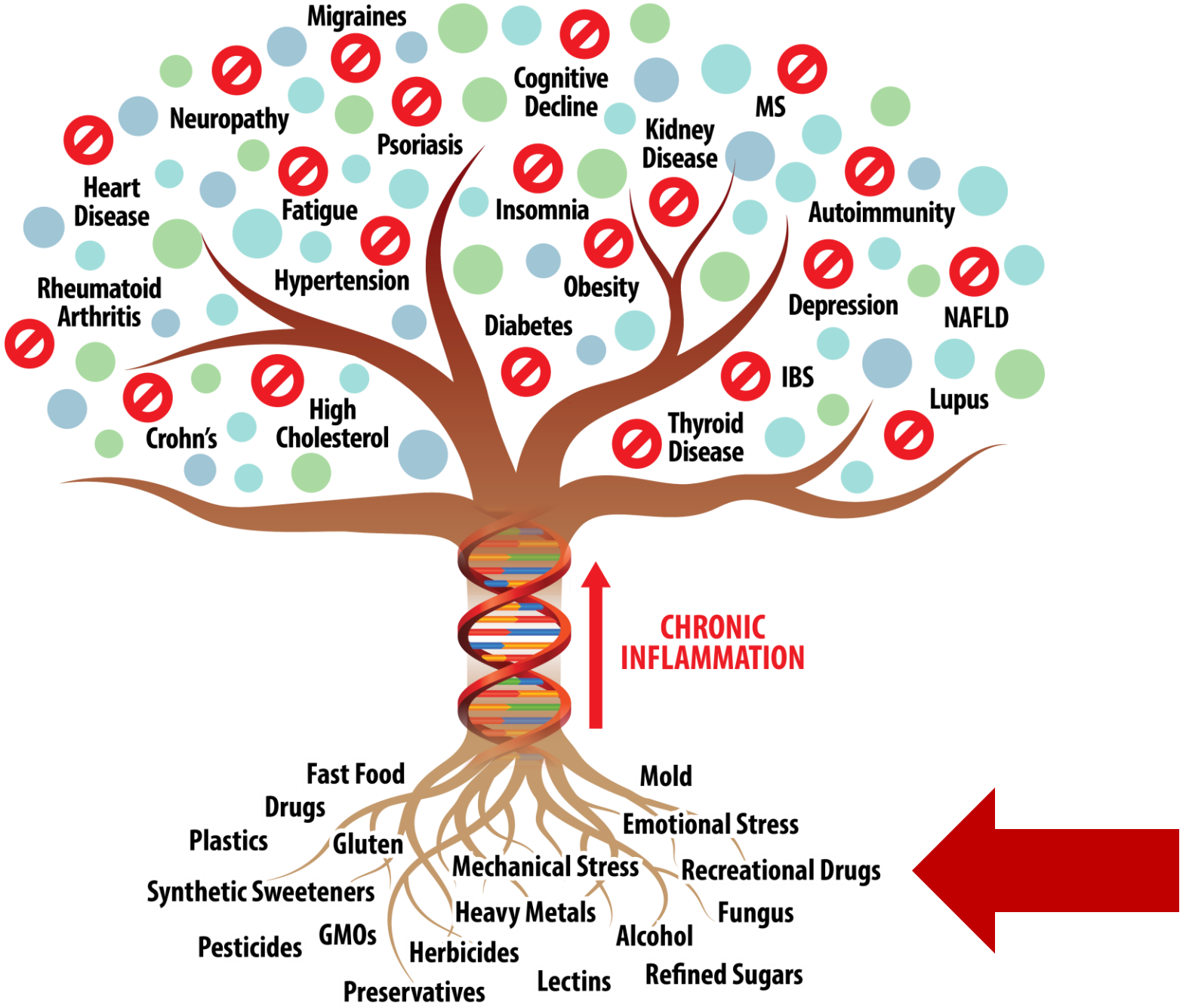
Migraines
Neuropathy
Psoriasis
Cognitive Decline
MS
Kidney Disease
Heart Disease
Fatigue
Insomnia
Autoimmunity
Rheumatoid Arthritis
Hypertension
Obesity
Depression
NAFLD
Diabetes
IBS
Lupus
Crohn's
High Cholesterol
Thyroid Disease
CHRONIC INFLAMMATION
Fast Food
Drugs
Plastics
Gluten
Mold
Emotional Stress
Mechanical Stress
Recreational Drugs
Synthetic Sweeteners
Heavy Metals
Fungus
Pesticides
GMOs
Herbicides
Alcohol
Preservatives
Lectins
Refined Sugars

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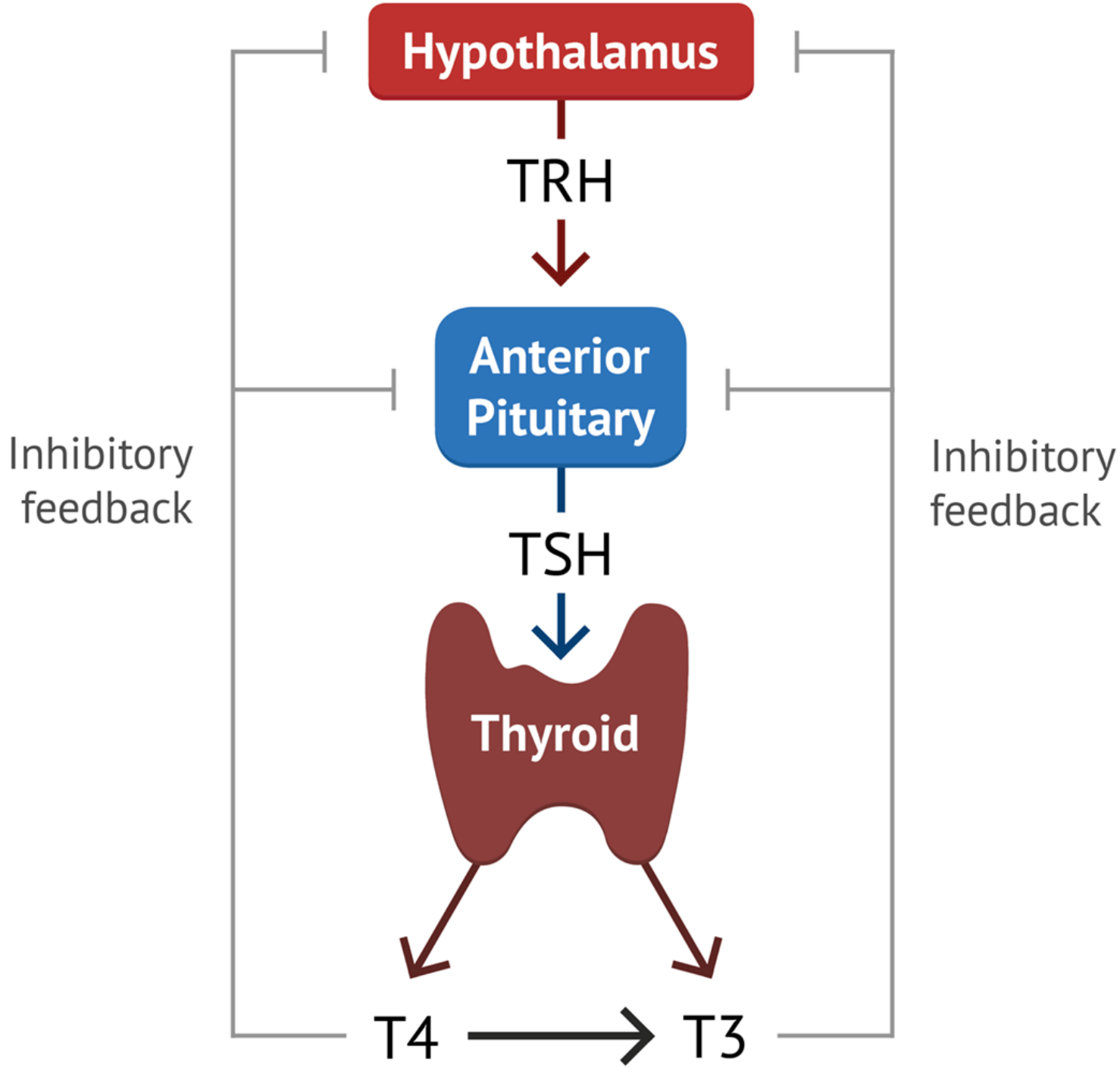
Hypothalamus
TRH
Anterior Pituitary
TSH
Thyroid
T4
T3
Inhibitory feedback
Inhibitory feedback

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Functional Lab Ranges

TSH: 1.5-2.0 / 1.8-3.0
T4: 6-12
Free T4: 1.3-1.8
T3 total: 100-180
Free T3: 3.2-4.2
T3 Uptake: 32-38 / 28-34
Reverse T3: 9-35
TBG: Path Lab Range
TPO Ab: 0
Thyroglobulin Ab: 0

* Updates are made as new and additional information becomes available.

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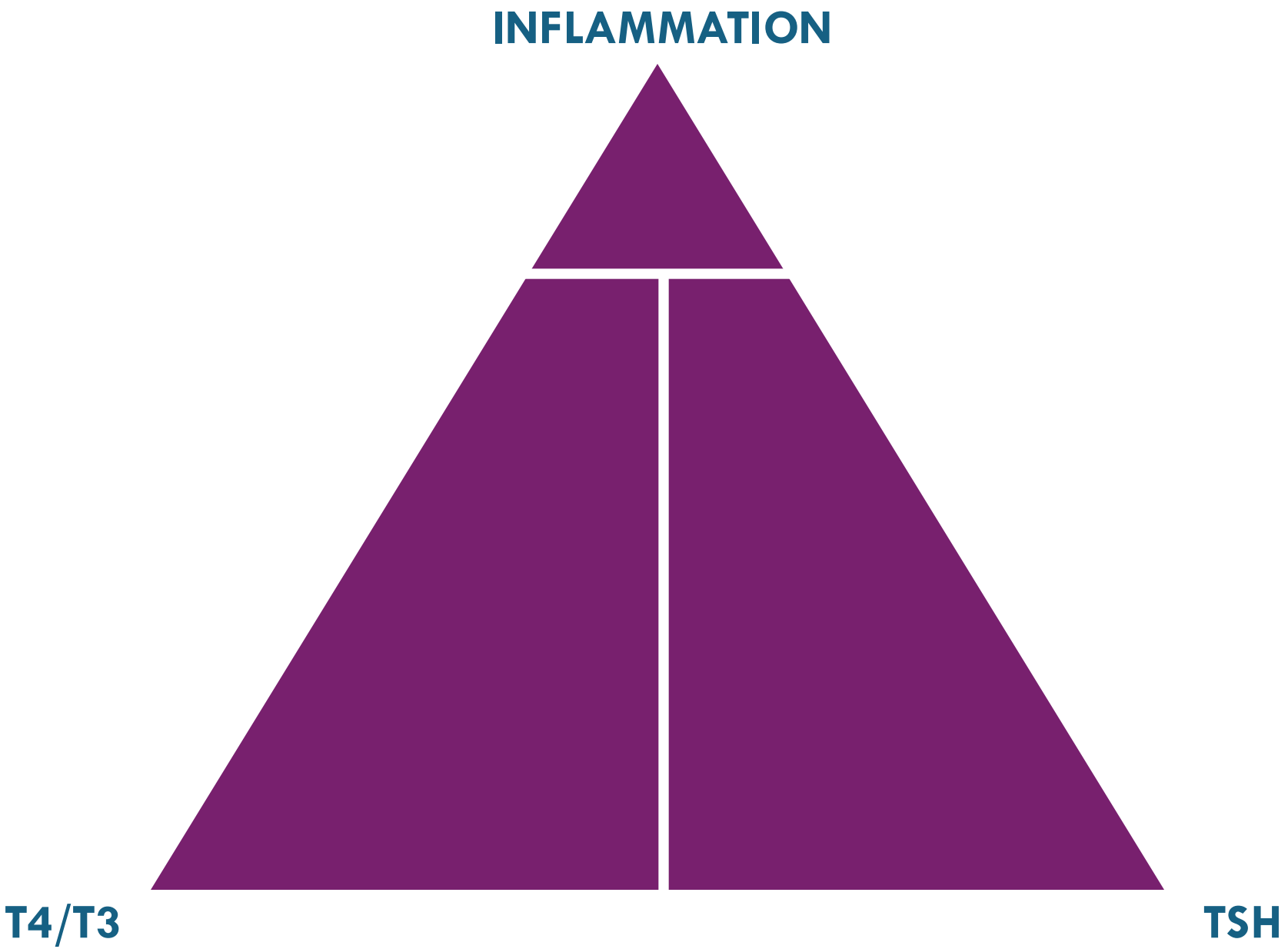
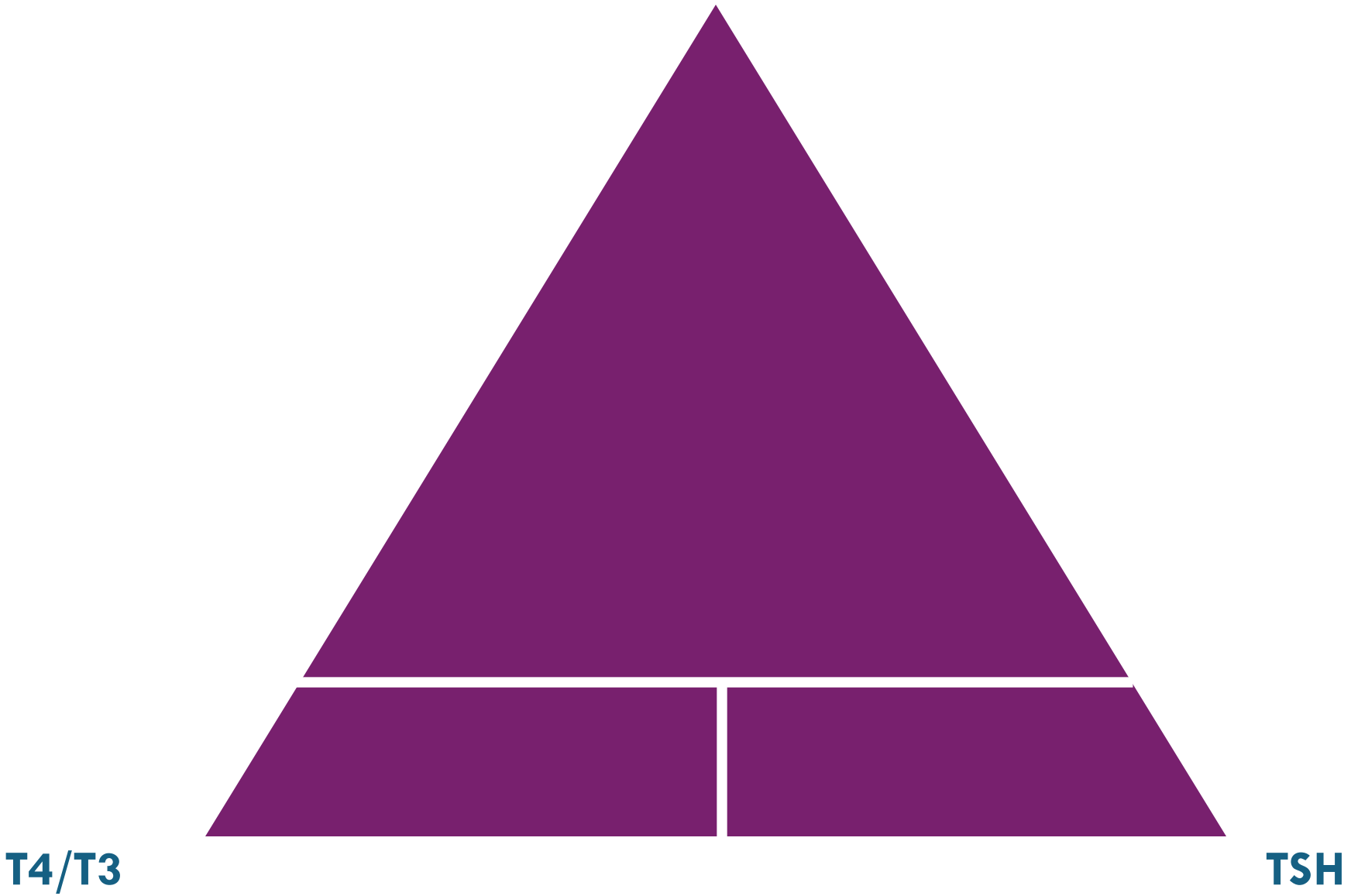
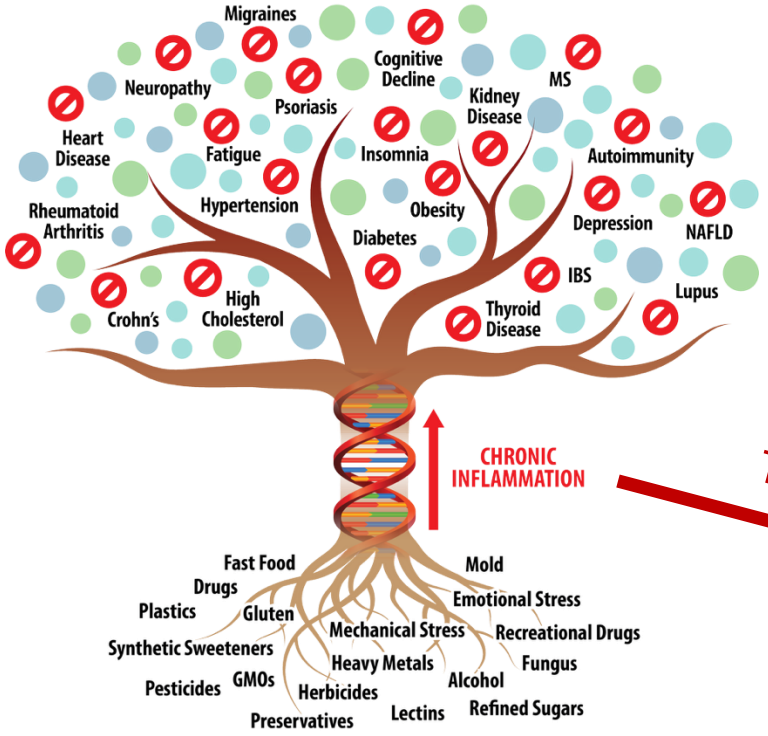
Euthyroid

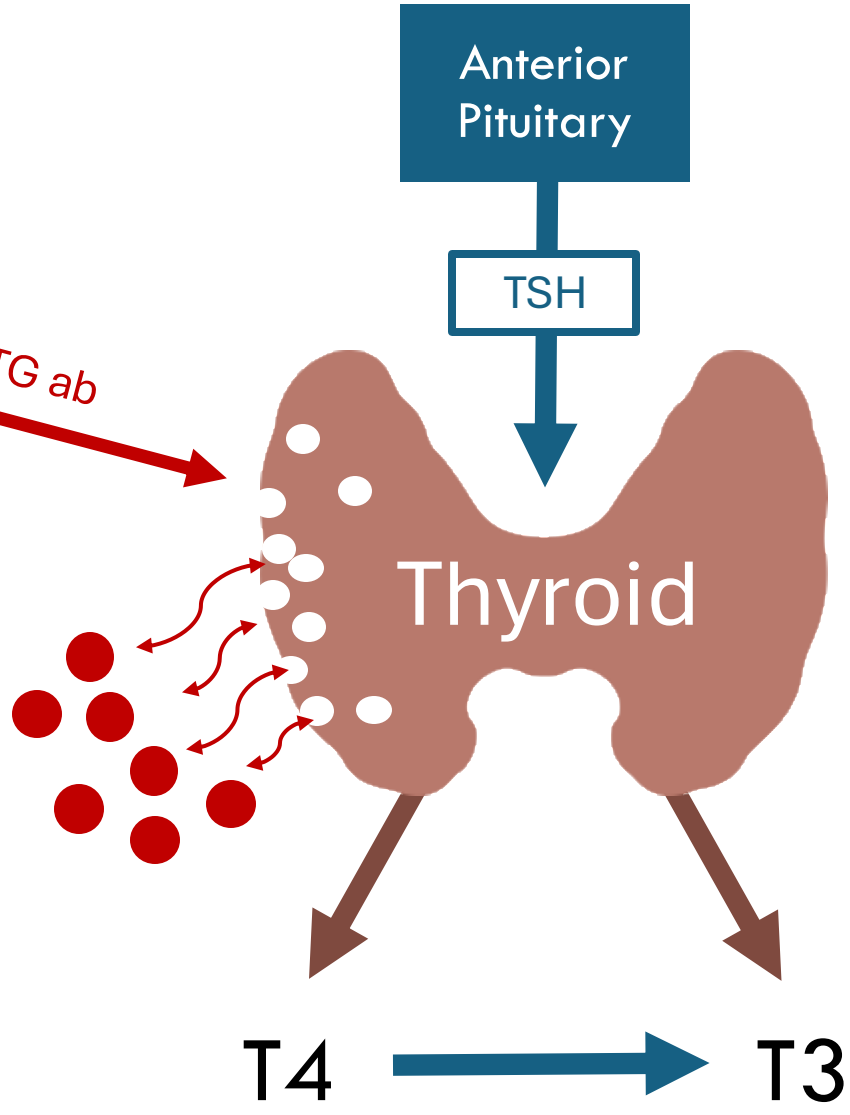


AI Hypothyroid
Developing





TPO/TG ab



TSH: WNL
T4: WNL, +
T3: WNL, +

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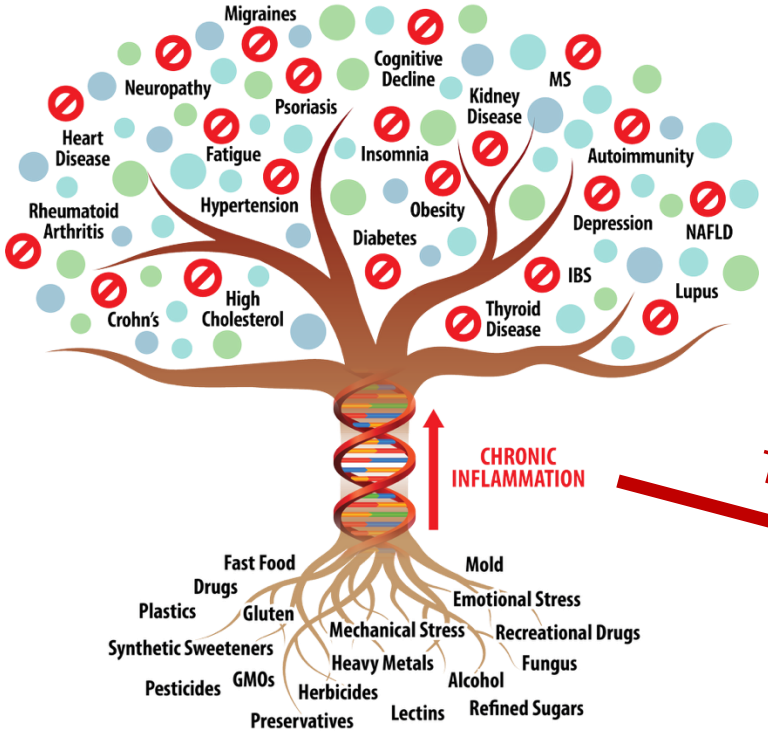
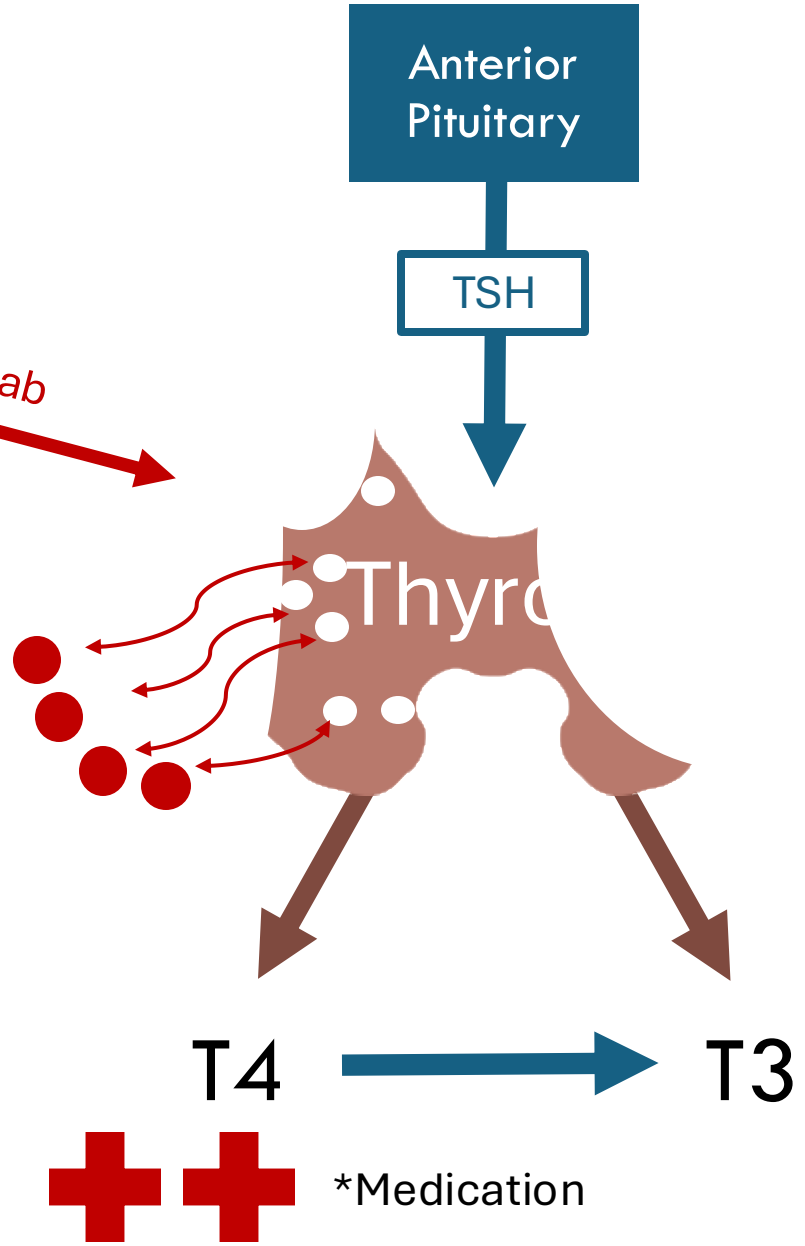
AI
Hypothyroid
Advancement



TPO/TG ab



TSH: WNL
T4: WNL
T3: WNL

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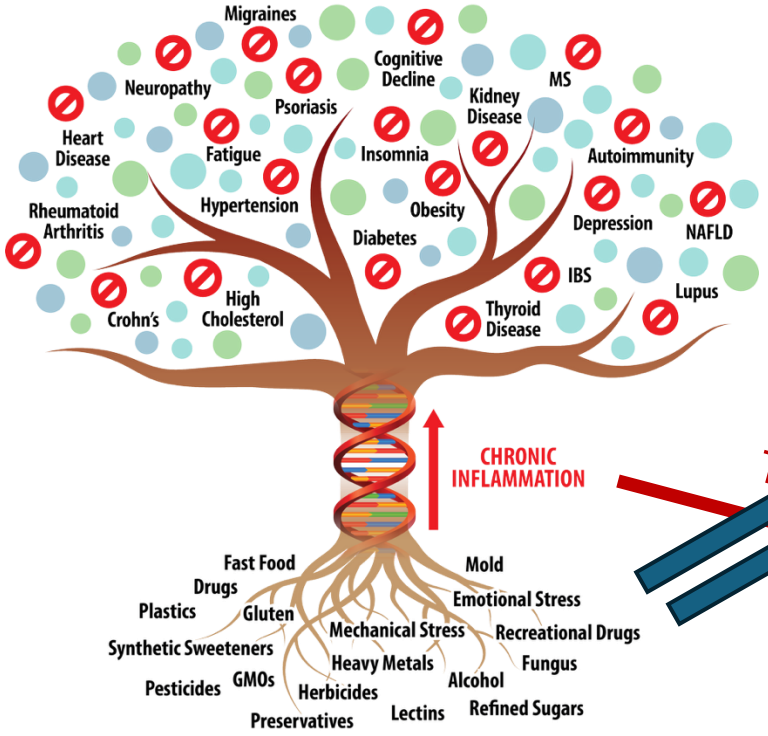
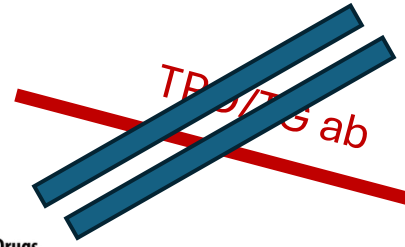
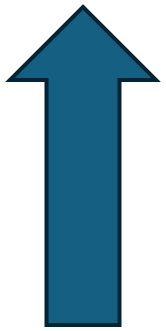
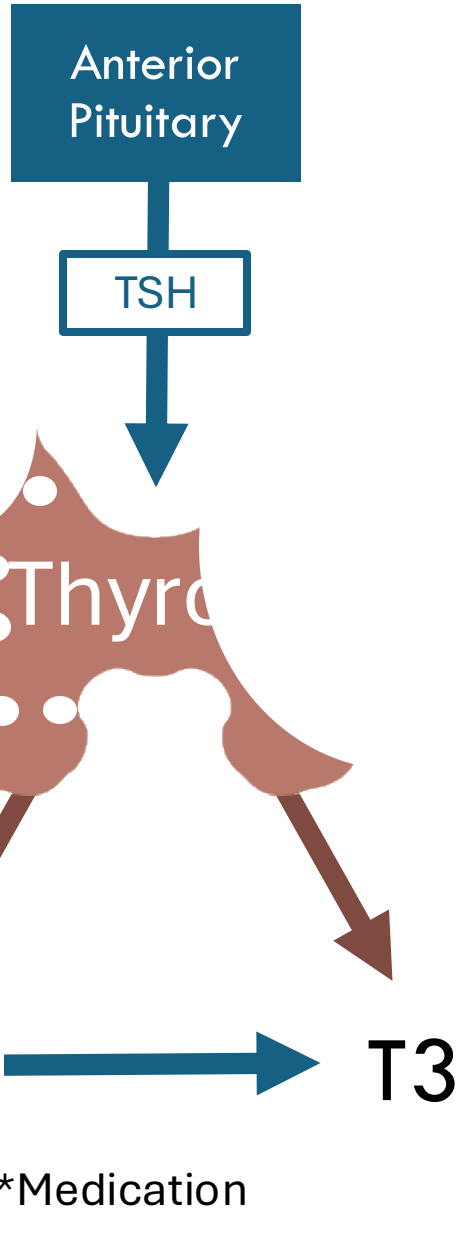
AI
Hypothyroid
Intervention









TSH: UP
T4: WNL, -
T3: WNL, -

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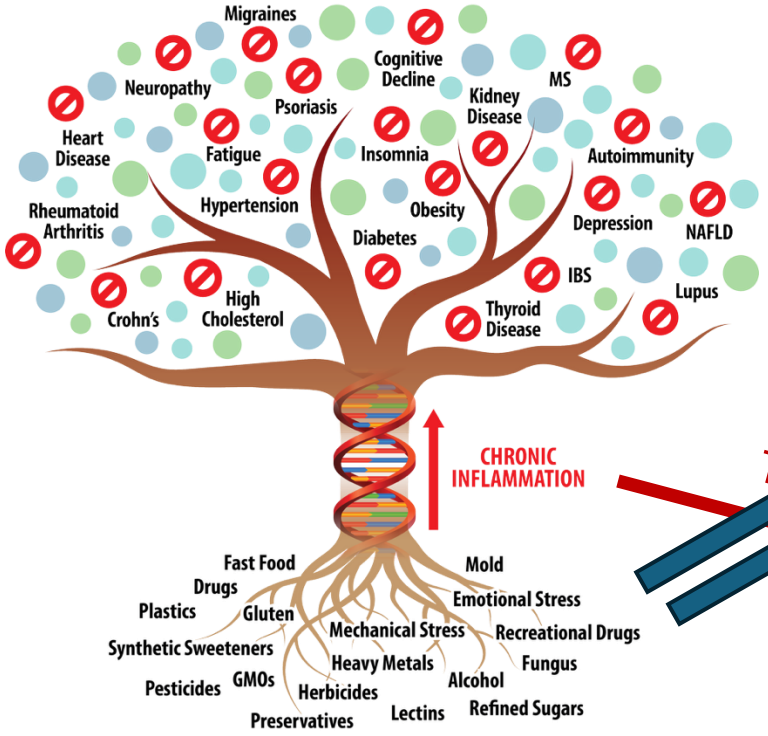
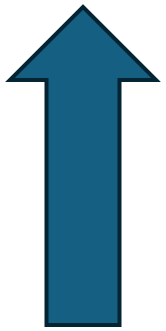
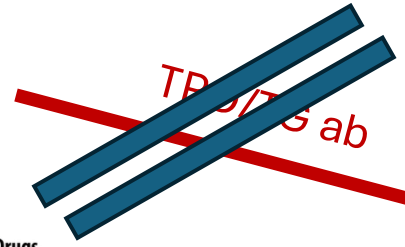
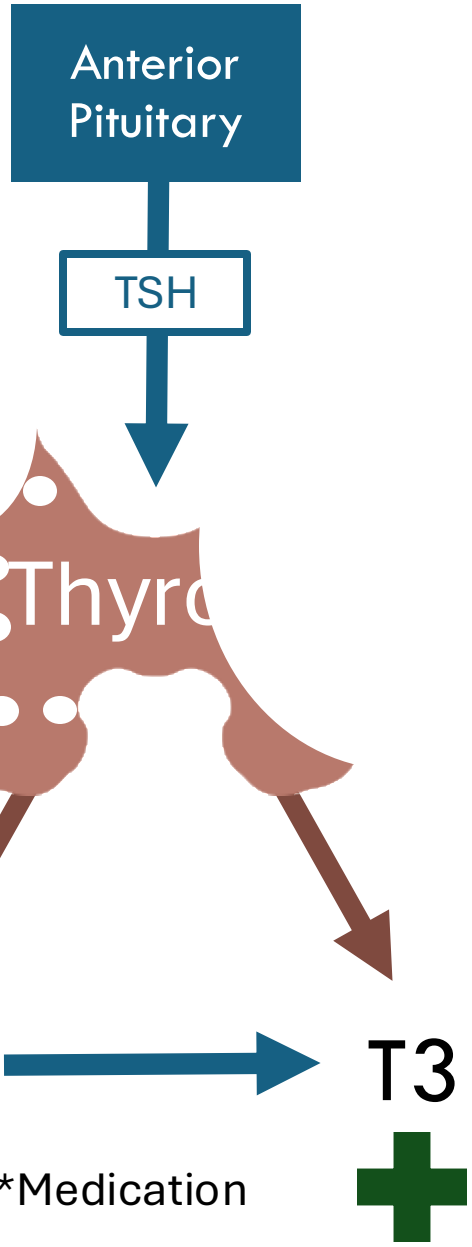
AI Hypothyroid Intervention/Balance









TSH: WNL
T4: WNL
T3: WNL

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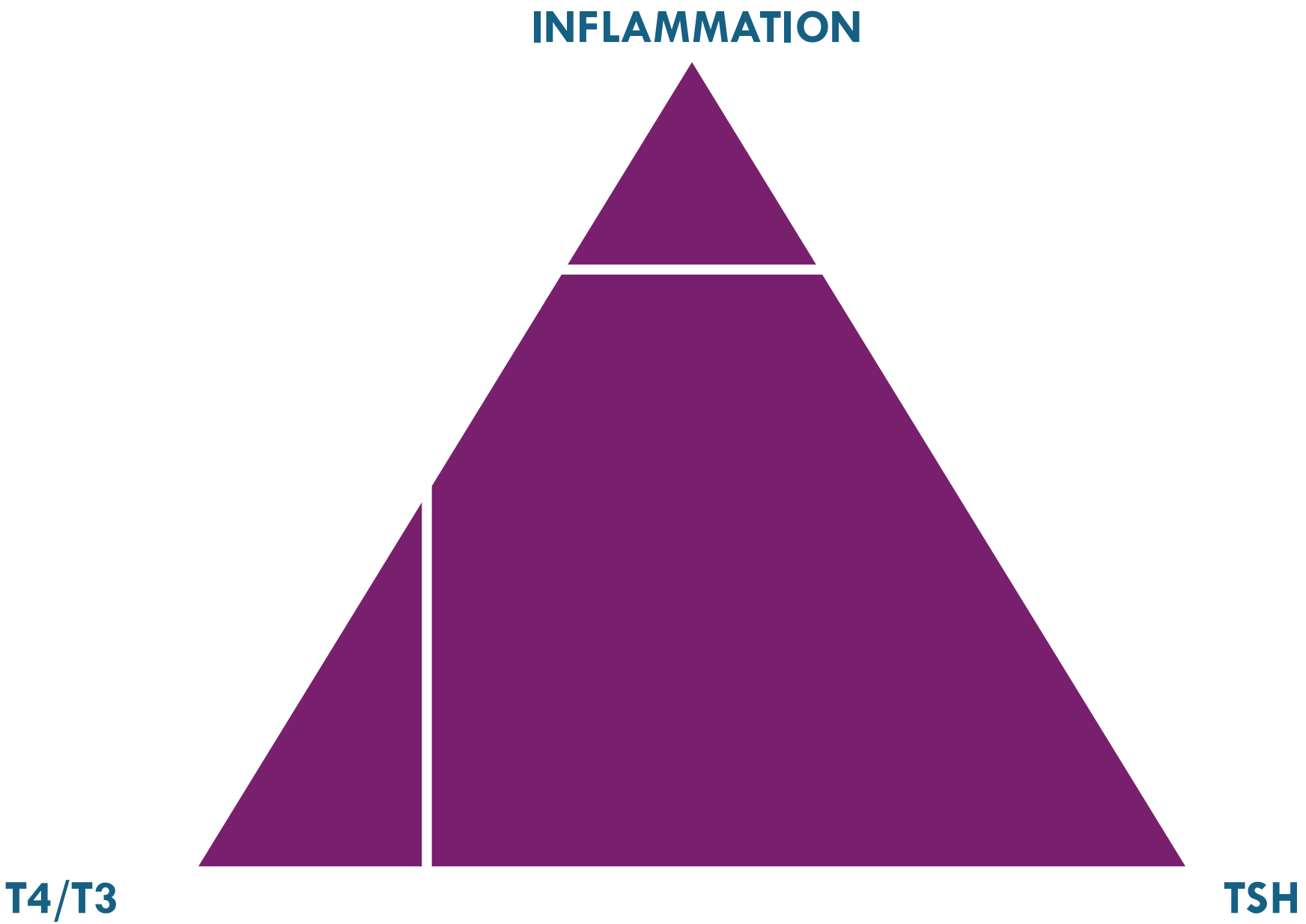
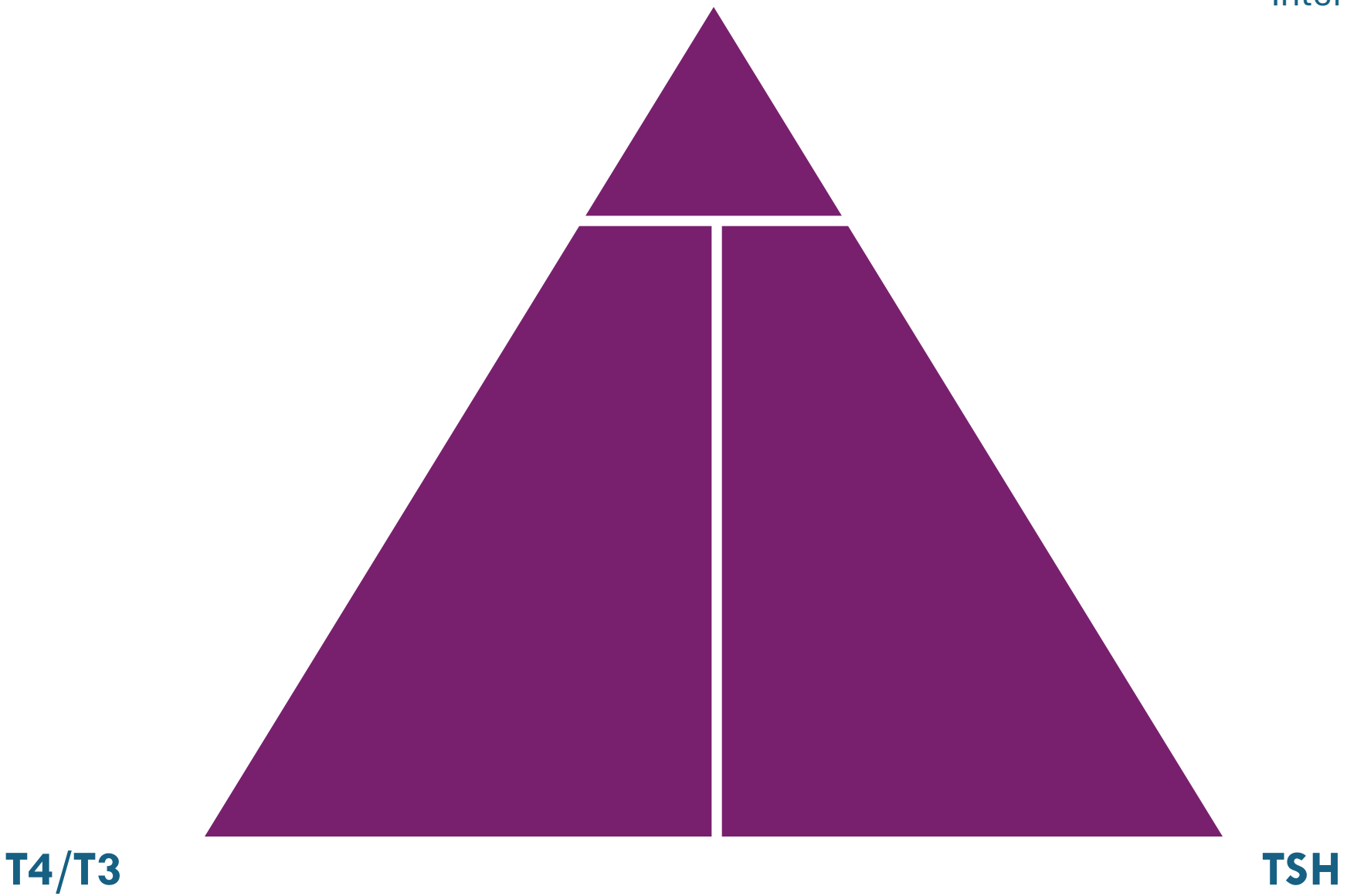
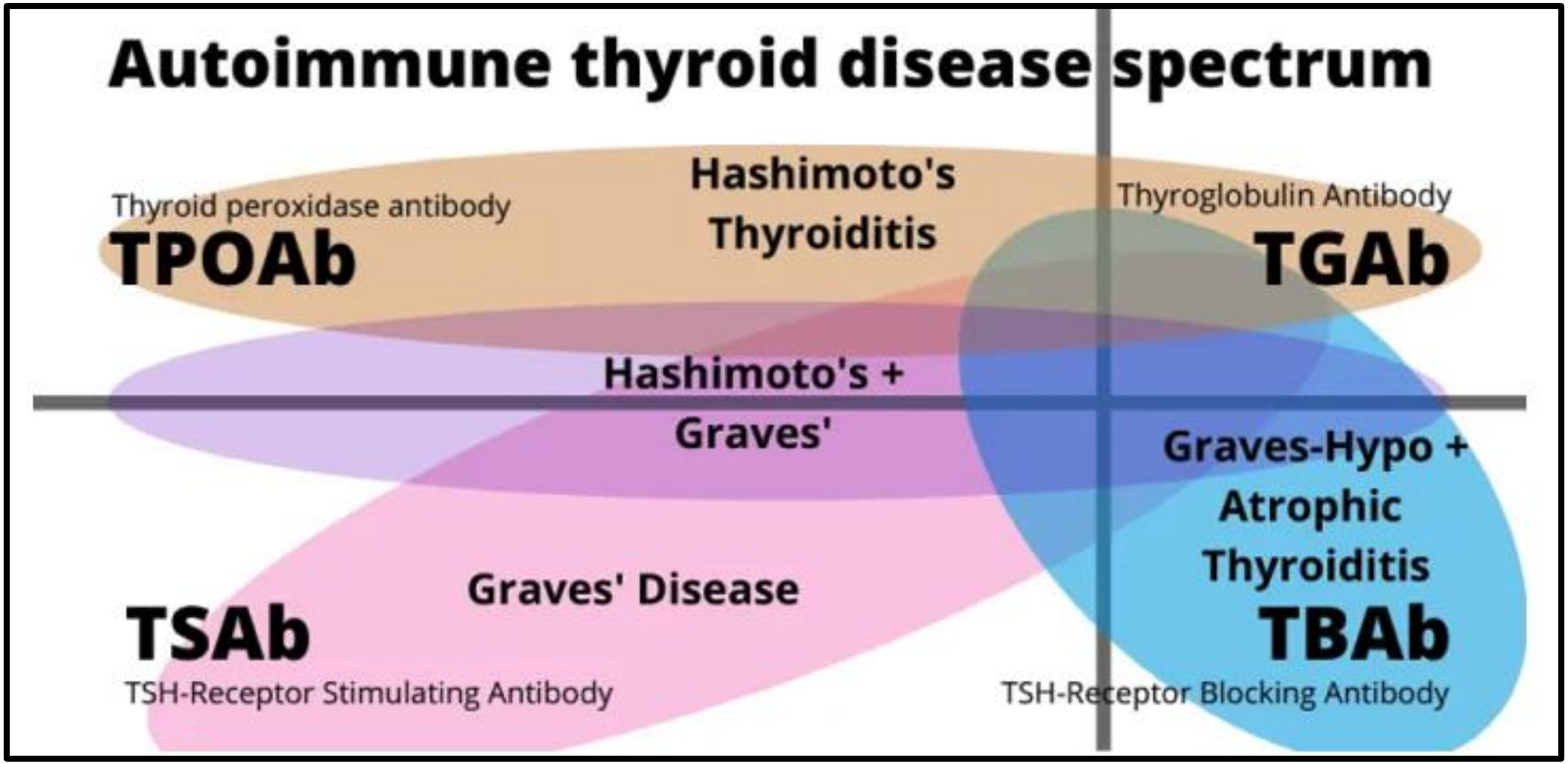
AI
Hypothyroid
Intervention



AI Hypothyroid
Intervention/Balance



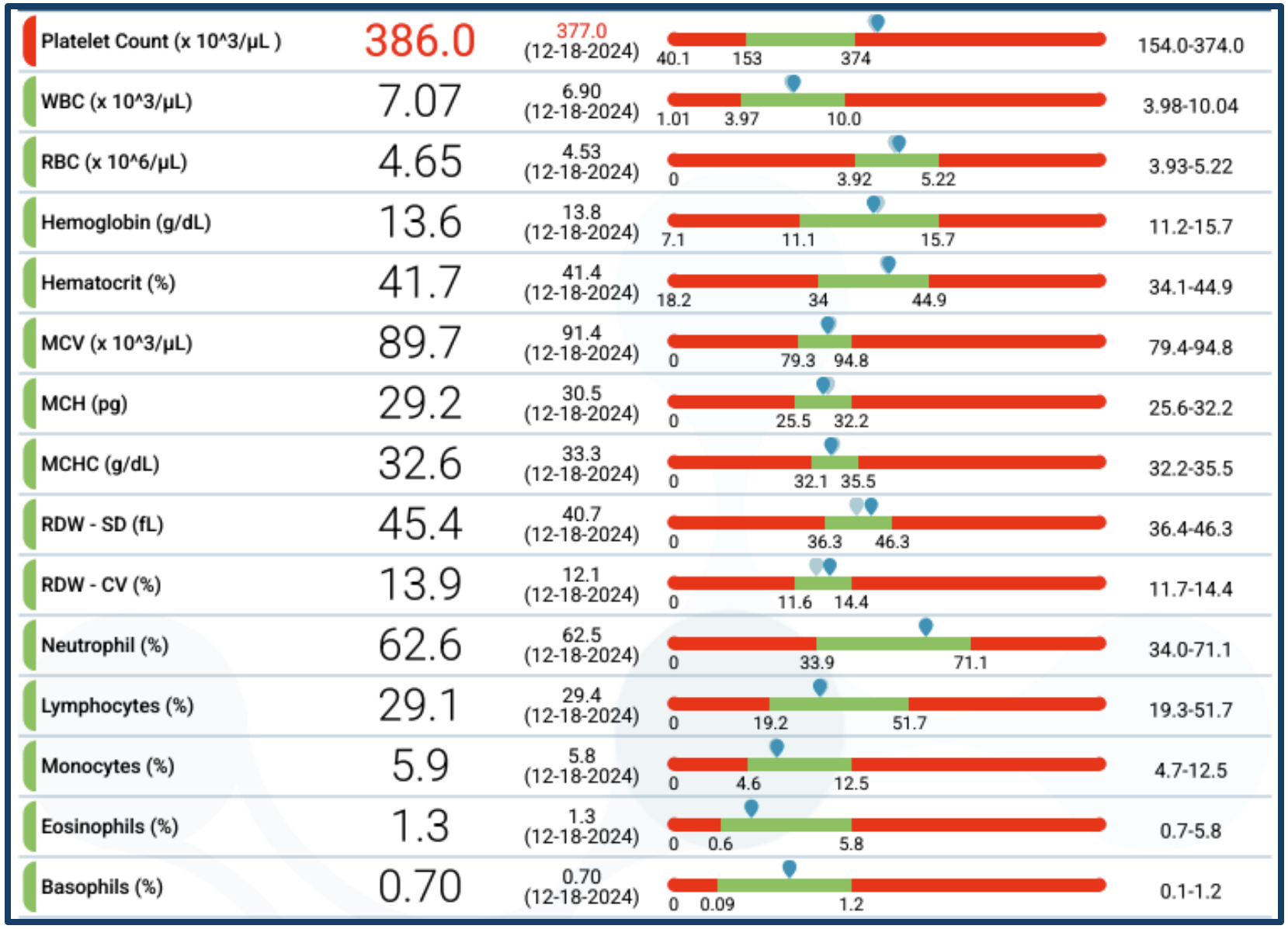


https://thyroidpatients.ca/2020/04/05/remissions-and-fluctuations-trab/

59 yo female
5’2” 225

Hypothyroidism
Hashimoto’s
Diverticulitis
Fibromyalgia

Levothyroxine



Platelet Count (x 10^3/µL)	386.0	377.0 (12-18-2024)	40.1 153 374	154.0-374.0
WBC (x 10^3/µL)	7.07	6.90 (12-18-2024)	1.01 3.97 10.0	3.98-10.04
RBC (x 10^6/µL)	4.65	4.53 (12-18-2024)	0 3.92 5.22	3.93-5.22
Hemoglobin (g/dL)	13.6	13.8 (12-18-2024)	7.1 11.1 15.7	11.2-15.7
Hematocrit (%)	41.7	41.4 (12-18-2024)	18.2 34 44.9	34.1-44.9
MCV (x 10^3/µL)	89.7	91.4 (12-18-2024)	0 79.3 94.8	79.4-94.8
MCH (pg)	29.2	30.5 (12-18-2024)	0 25.5 32.2	25.6-32.2
MCHC (g/dL)	32.6	33.3 (12-18-2024)	0 32.1 35.5	32.2-35.5
RDW - SD (fL)	45.4	40.7 (12-18-2024)	0 36.3 46.3	36.4-46.3
RDW - CV (%)	13.9	12.1 (12-18-2024)	0 11.6 14.4	11.7-14.4
Neutrophil (%)	62.6	62.5 (12-18-2024)	0 33.9 71.1	34.0-71.1
Lymphocytes (%)	29.1	29.4 (12-18-2024)	0 19.2 51.7	19.3-51.7
Monocytes (%)	5.9	5.8 (12-18-2024)	0 4.6 12.5	4.7-12.5
Eosinophils (%)	1.3	1.3 (12-18-2024)	0 0.6 5.8	0.7-5.8
Basophils (%)	0.70	0.70 (12-18-2024)	0 0.09 1.2	0.1-1.2

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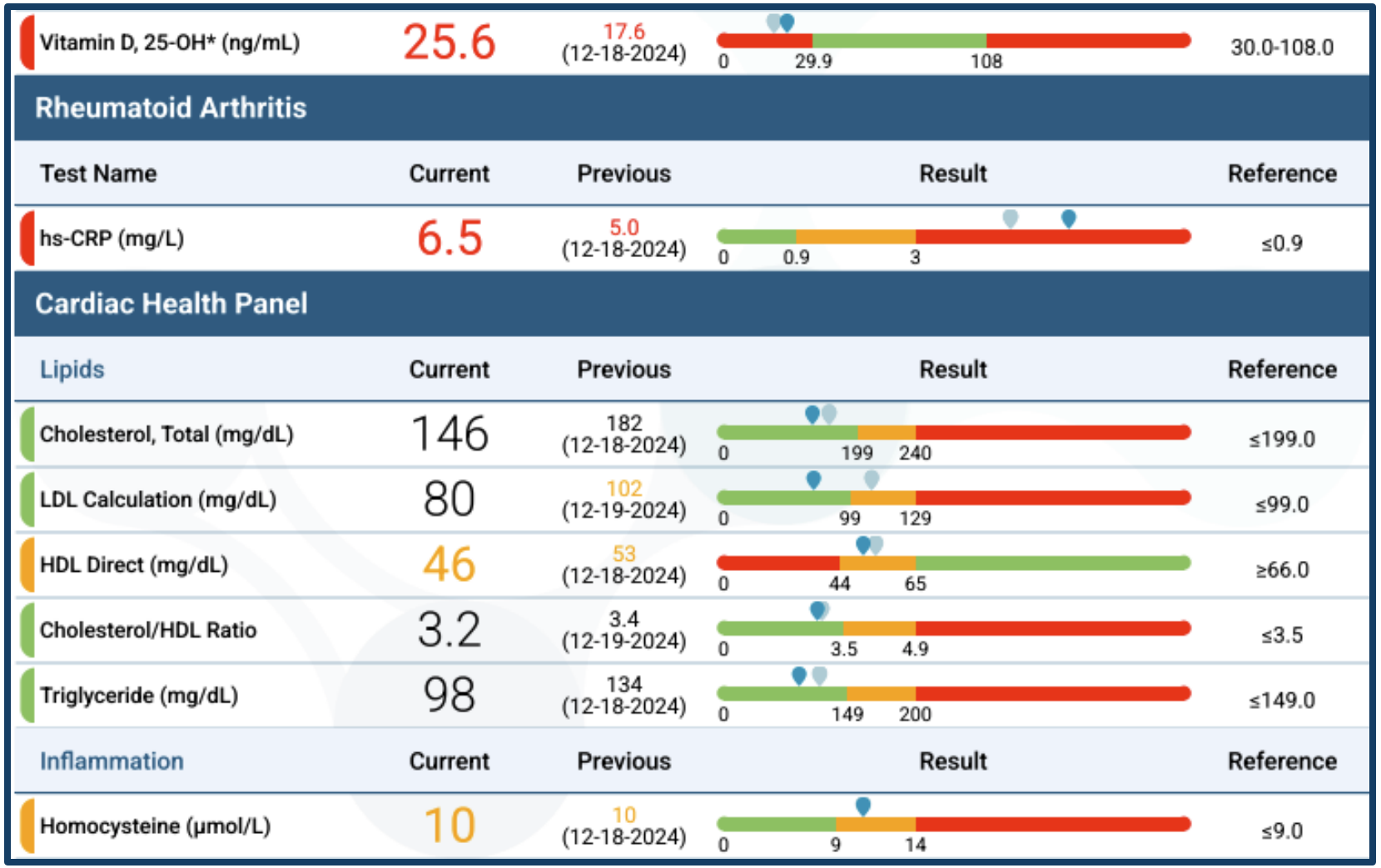
5’2” 225

Hypothyroidism
Hashimoto’s
Diverticulitis
Fibromyalgia

Levothyroxine



Vitamin D, 25-OH* (ng/mL)	25.6	17.6 (12-18-2024)	0 29.9 108	30.0-108.0

Rheumatoid Arthritis

Test Name	Current	Previous	Result	Reference
hs-CRP (mg/L)	6.5	5.0 (12-18-2024)	0 0.9 3	≤0.9

Cardiac Health Panel

Lipids	Current	Previous	Result	Reference
Cholesterol, Total (mg/dL)	146	182 (12-18-2024)	0 199 240	≤199.0
LDL Calculation (mg/dL)	80	102 (12-19-2024)	0 99 129	≤99.0
HDL Direct (mg/dL)	46	53 (12-18-2024)	0 44 65	≥66.0
Cholesterol/HDL Ratio	3.2	3.4 (12-19-2024)	0 3.5 4.9	≤3.5
Triglyceride (mg/dL)	98	134 (12-18-2024)	0 149 200	≤149.0
Inflammation	**Current**	**Previous**	**Result**	**Reference**
Homocysteine (µmol/L)	10	10 (12-18-2024)	0 9 14	≤9.0

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Levothyroxine

Iron (ug/dL)	57	115 (12-18-2024)	0 36 145	37.0-145.0
UIBC (µg/dL)	304	239 (12-18-2024)	0 111 347	112.0-347.0
TIBC (µg/dL)	361	354 (12-19-2024)	0 148 492	149.0-492.0
Transferrin Saturation (%)	16	32 (12-19-2024)	0 11 45	12.0-45.0

T3 - Triiodothyronine (ng/mL)	0.5	1.2 (12-18-2024)	0 0.7 2	0.8-2.0
T4 - Thyroxine (µg/dL)	7.2	11.9 (12-18-2024)	0 4.4 9.8	4.5-9.8
Free T3 (pg/mL)	1.7	3.0 (12-18-2024)	0 1.9 4.4	2.0-4.4
Free T4 (ng/dL)	0.9	1.7 (12-18-2024)	0 0.8 1.7	0.9-1.7
TSH (µIU/mL) Notes	46.000	0.457 (12-18-2024)	0 0.11 4.91	0.111-4.91

***For THIS specific patient

Suggested Protocol

Phase 1:

- 21-Day Metabolic Clearing Protocol
- Binder Pro, 4 caps before bed
- Follow the diet accompanying the Program

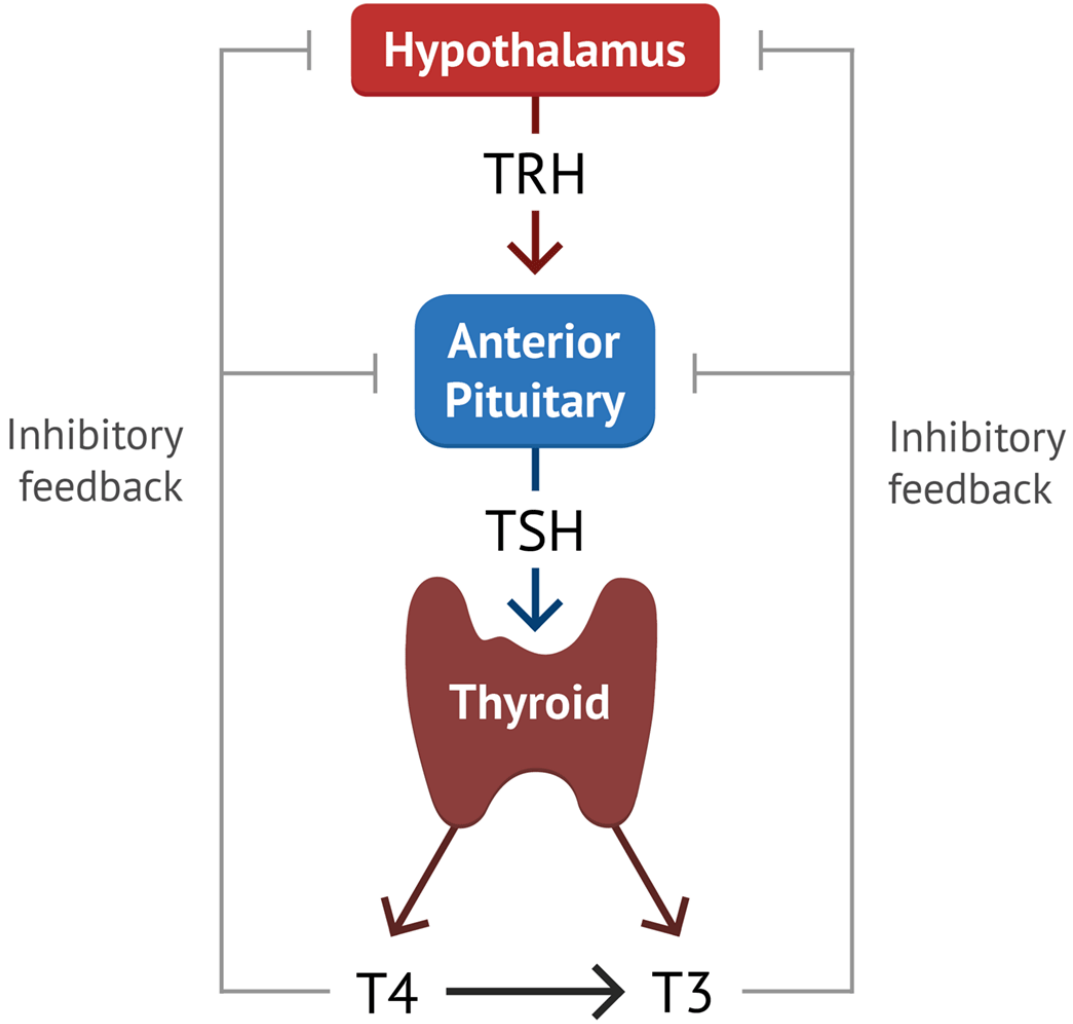
Phase 2:

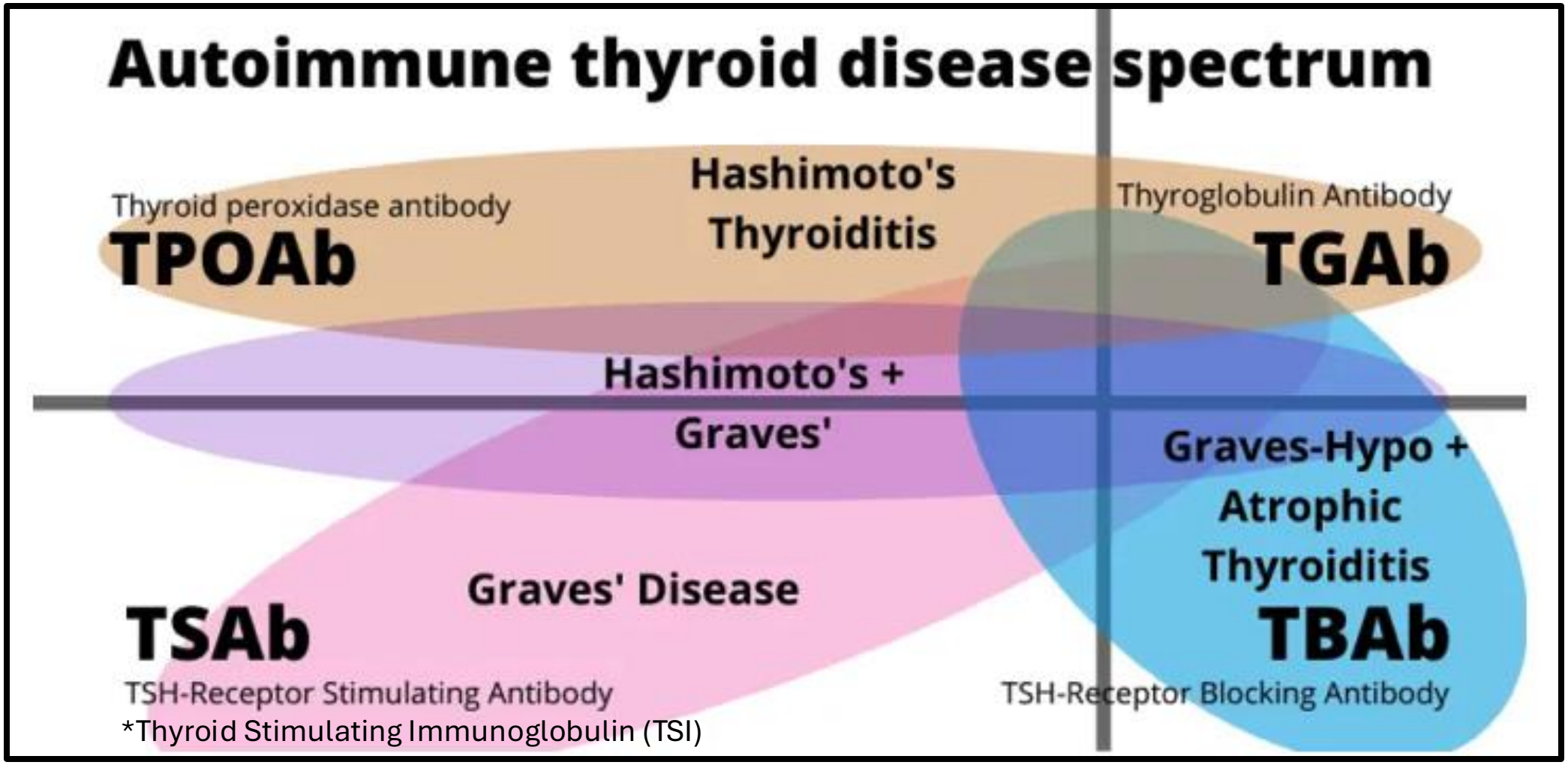
- Multi+ powder, 1 dose daily
- Omega 3 Softgels, 2 AM & PM
- Super G Antioxidant, 1 per meal
- Curcumin+, 1 per meal

+ Paleo style dietary recommendation.

Hyperthyroidism

1. Medically Induced
2. Supplementally Induced
3. Adenoma Induced (rare)
4. Grave's Disease
    - *Grave's Hypothyroidism





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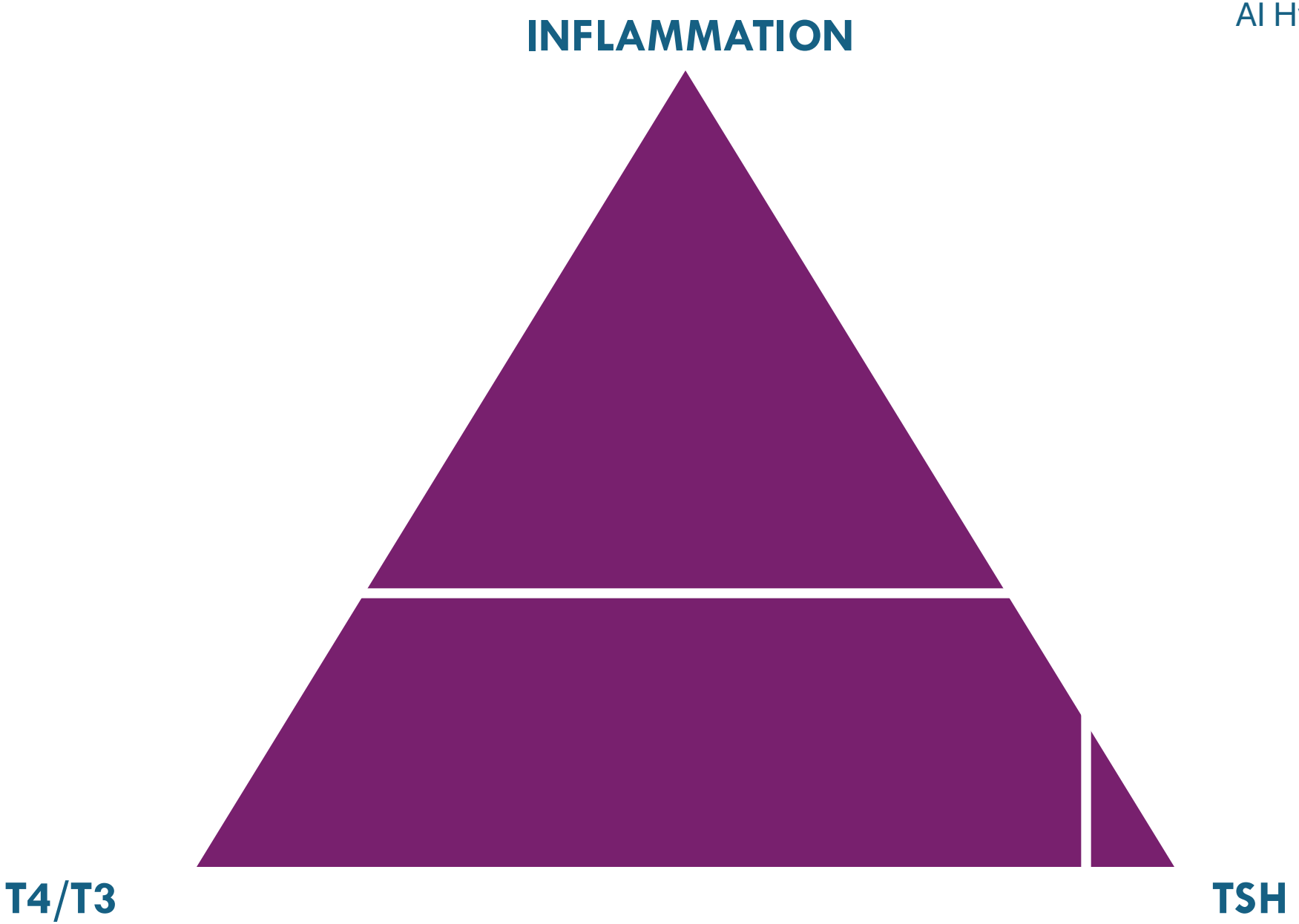
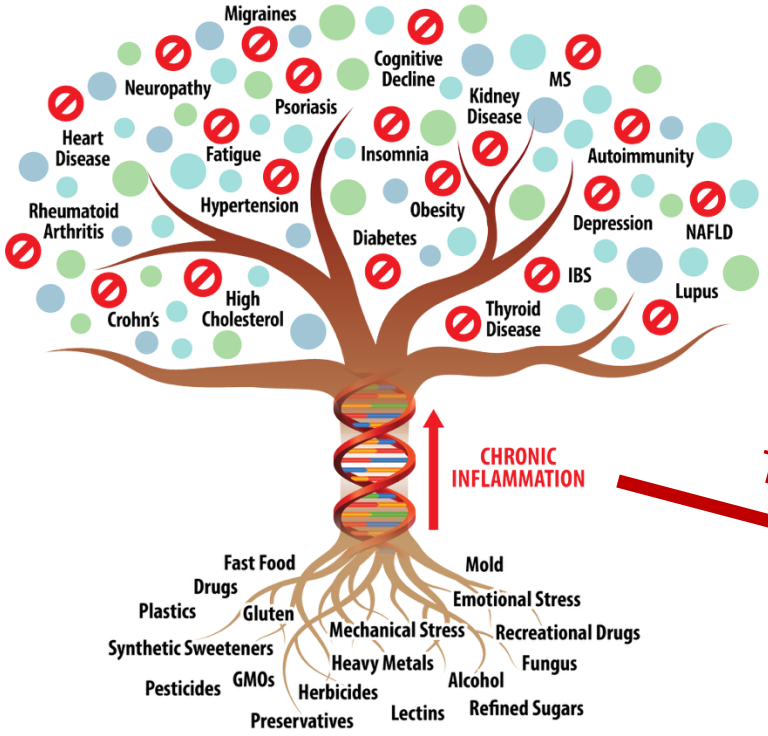
Graves' disease is caused by thyroid stimulating immunoglobulin (TSI), also known as thyroid stimulating antibody (TSAb). B lymphocytes primarily synthesize Thyroid stimulating immunoglobulin within the thyroid cells, but it can also be synthesized in lymph nodes and bone marrow. B lymphocytes are stimulated by T lymphocytes which get sensitized by antigen in the thyroid gland. Thyroid stimulating immunoglobulin binds with thyroid-stimulating hormone (TSH) receptor on the thyroid cell membrane and stimulates the action of the thyroid-stimulating hormone. It stimulates both, thyroid hormone synthesis and thyroid gland growth, causing hyperthyroidism and thyromegaly.[3]

Several environmental factors including pregnancy (mainly postpartum), iodine excess, infections, emotional stress, smoking, and interferon alfa trigger immune responses on susceptible genes to eventually cause Graves' disease.

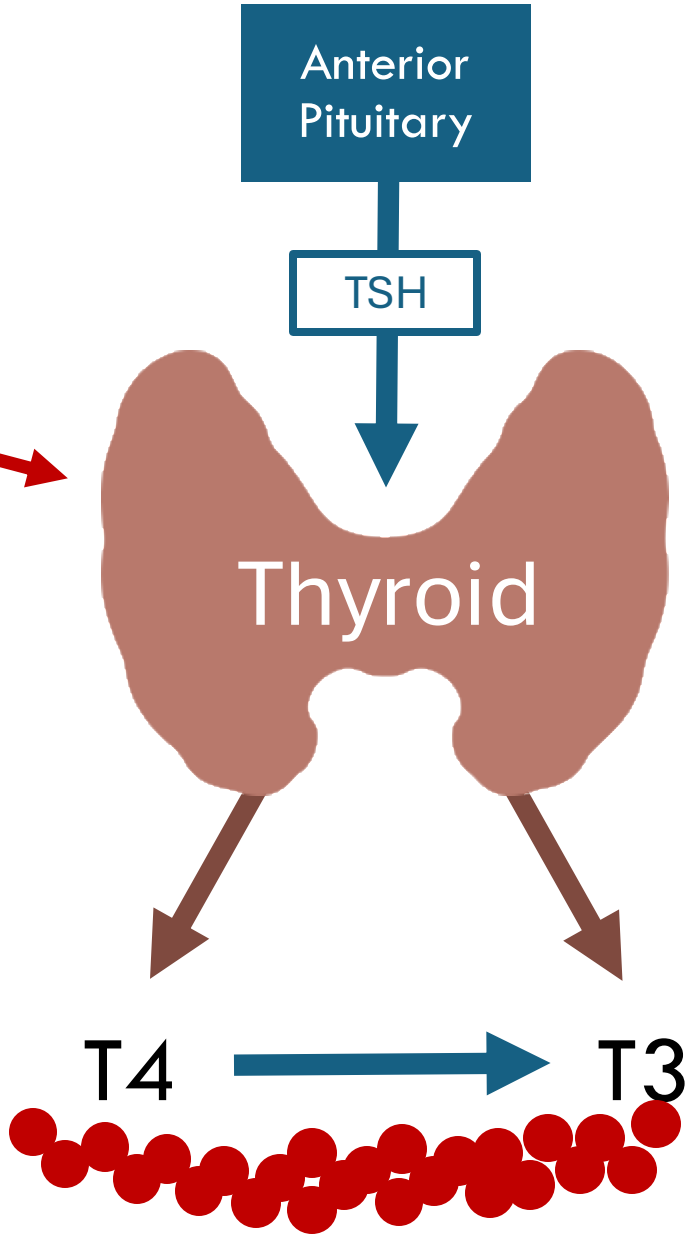
Graves' orbitopathy (ophthalmopathy) is caused by inflammation, cellular proliferation and increased growth of extraocular muscles and retro-orbital connective and adipose tissues due to the actions of thyroid stimulating antibodies and cytokines released by cytotoxic T lymphocytes (killer cells). These cytokines and thyroid stimulating antibodies activate periorbital fibroblasts and preadipocytes, causing synthesis of excess hydrophilic glycosaminoglycans (GAG) and retro-orbital fat growth. Glycosaminoglycans cause muscle swelling by trapping water. These changes give rise to proptosis, diplopia, congestion, and periorbital edema. If left untreated, it eventually leads to irreversible fibrosis of the muscles.[4]


INFLAMMATION
T4/T3
TSH

AI Hyperthyroid



TSI/TSAb



TSH: LOW
T4: HIGH
T3: HIGH

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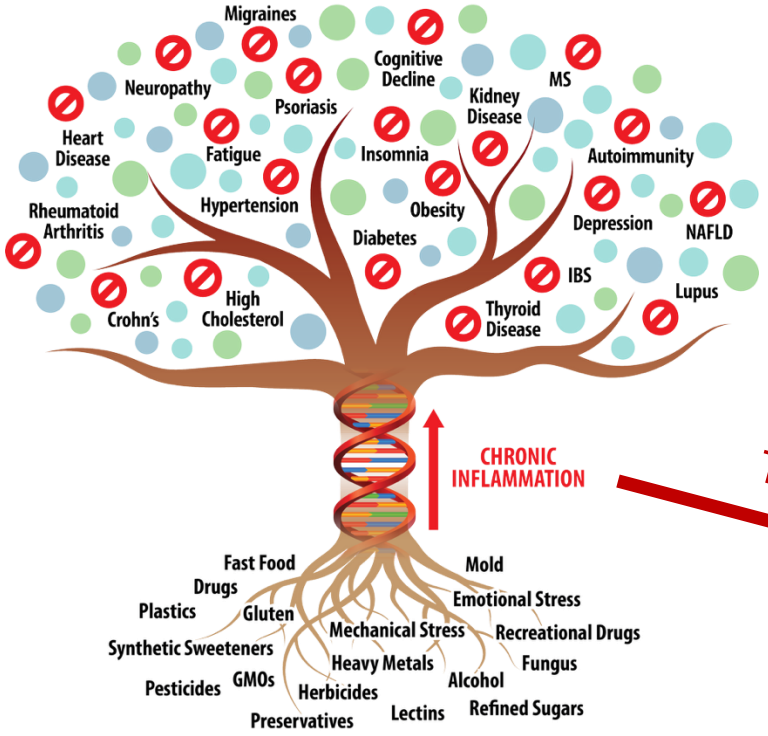
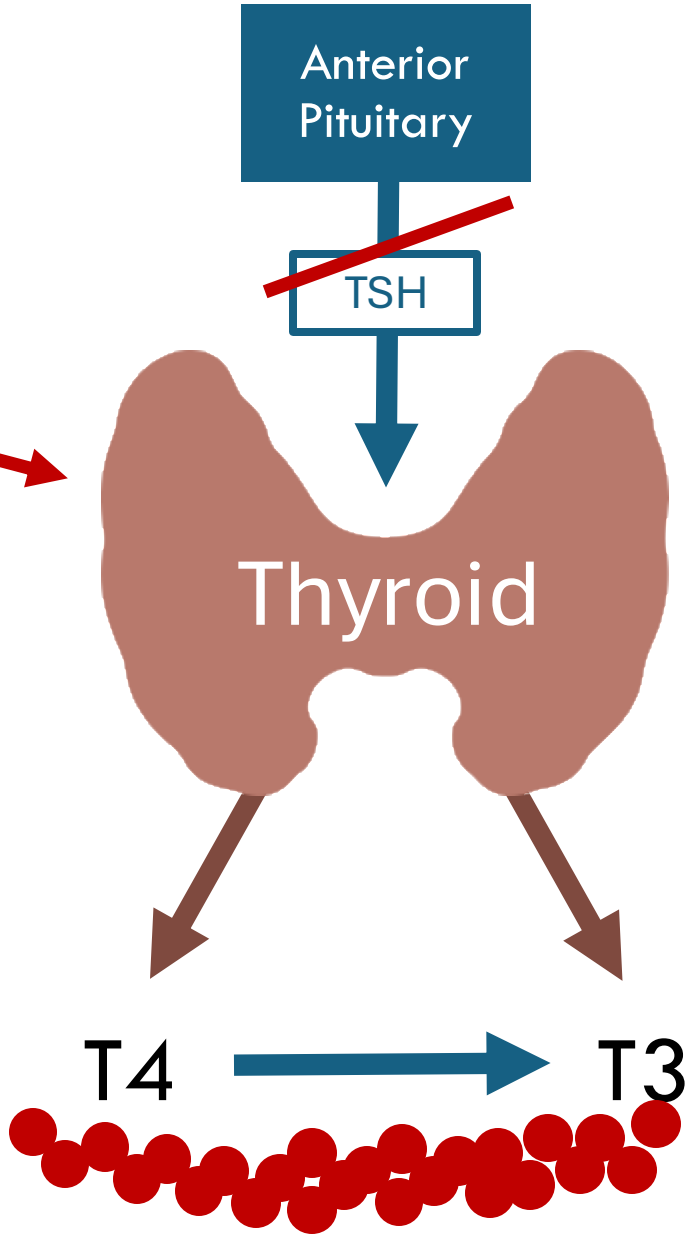
AI Hyperthyroid

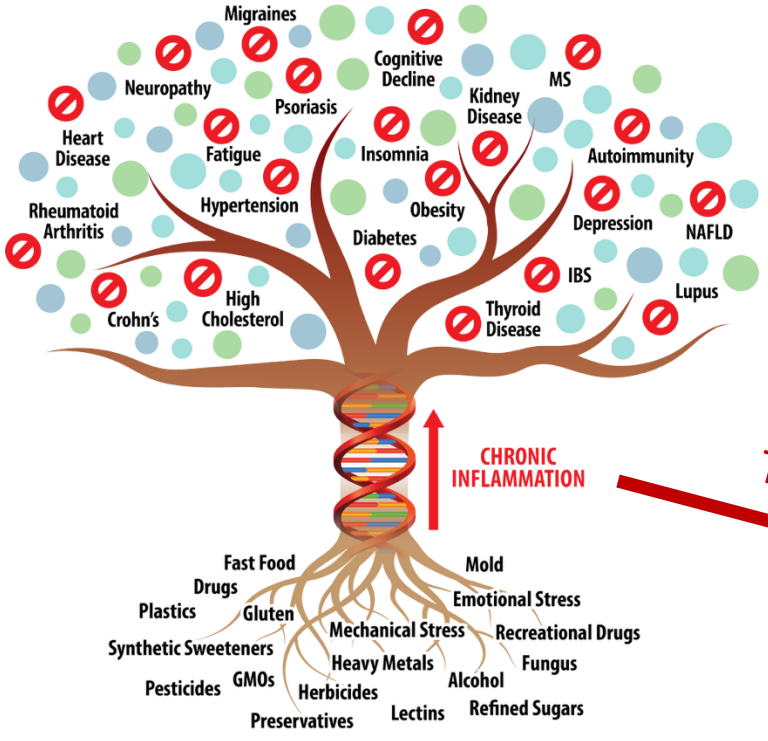


TSI/TSAb

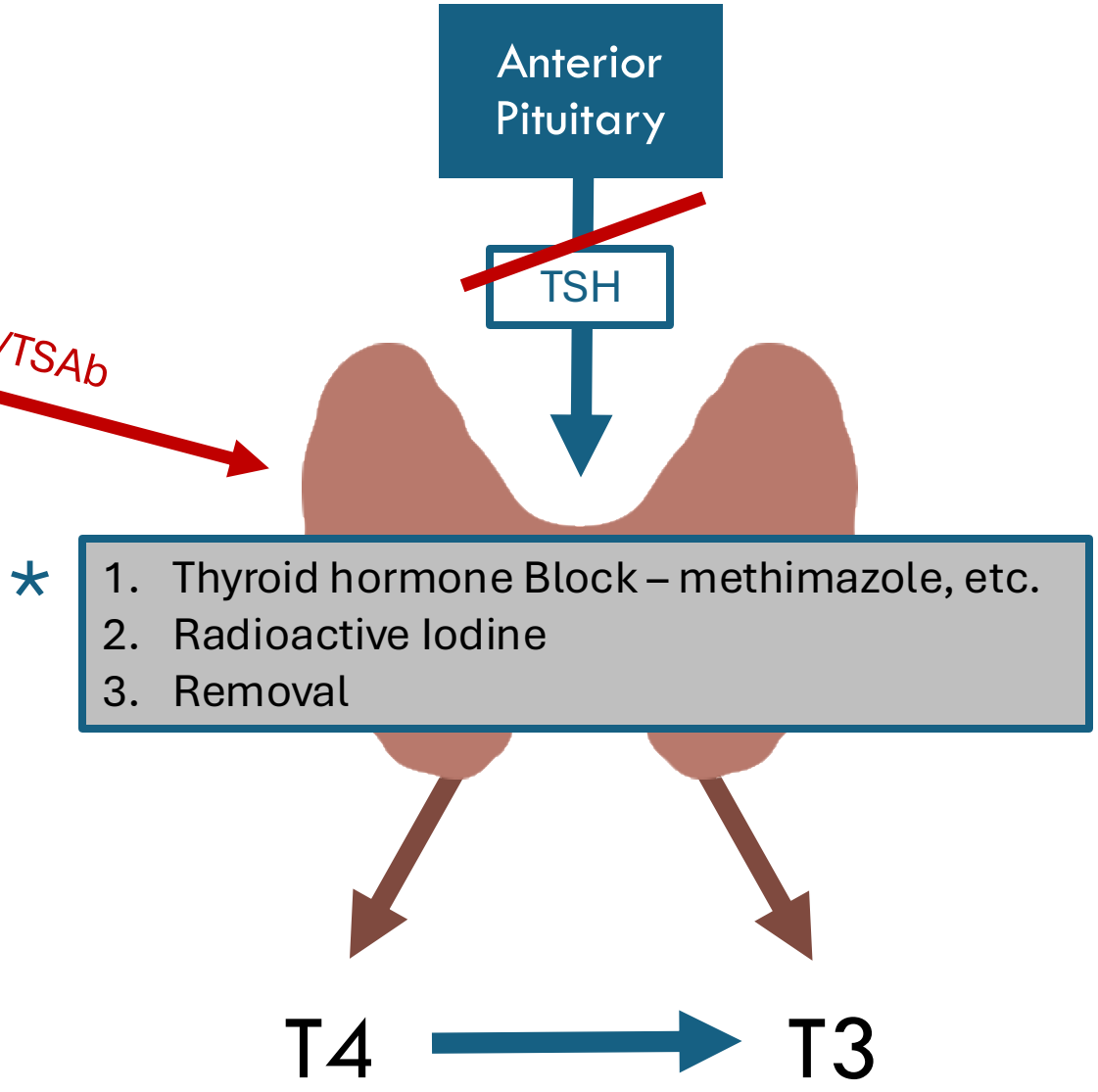


TSH: LOW
T4: HIGH
T3: HIGH

Biogenetix



TSI/TSAb



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TSH: LOW
T4: HIGH
T3: HIGH

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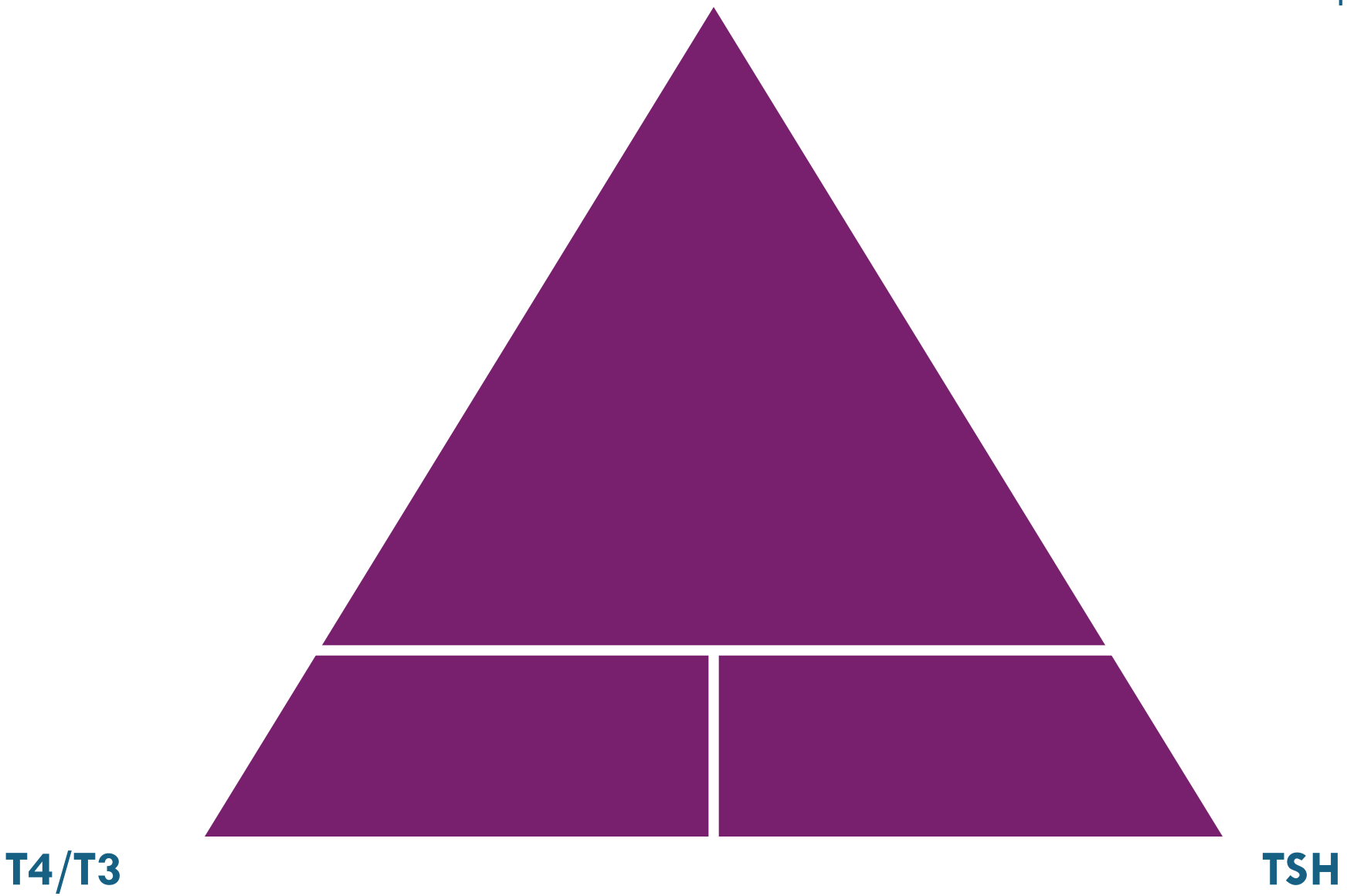
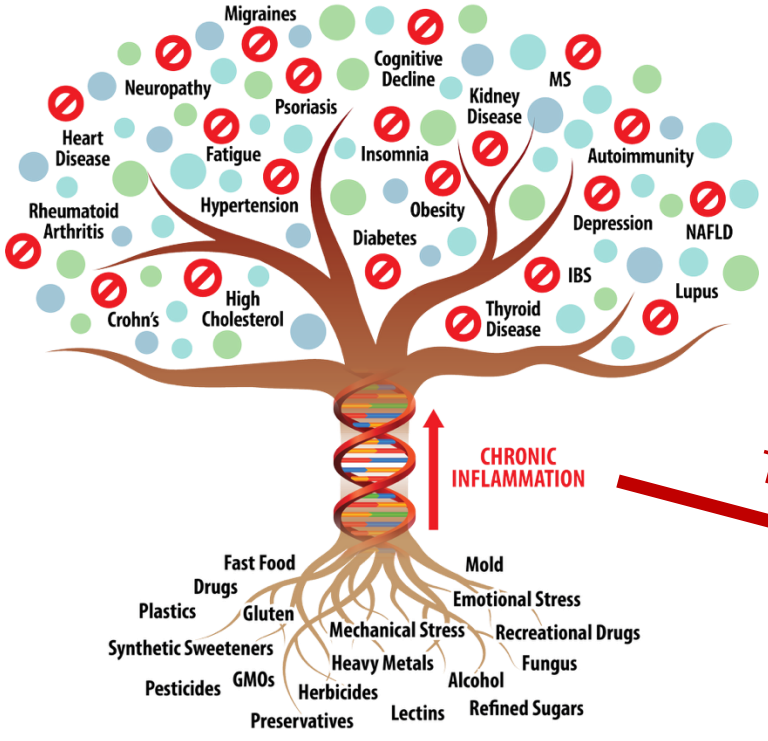
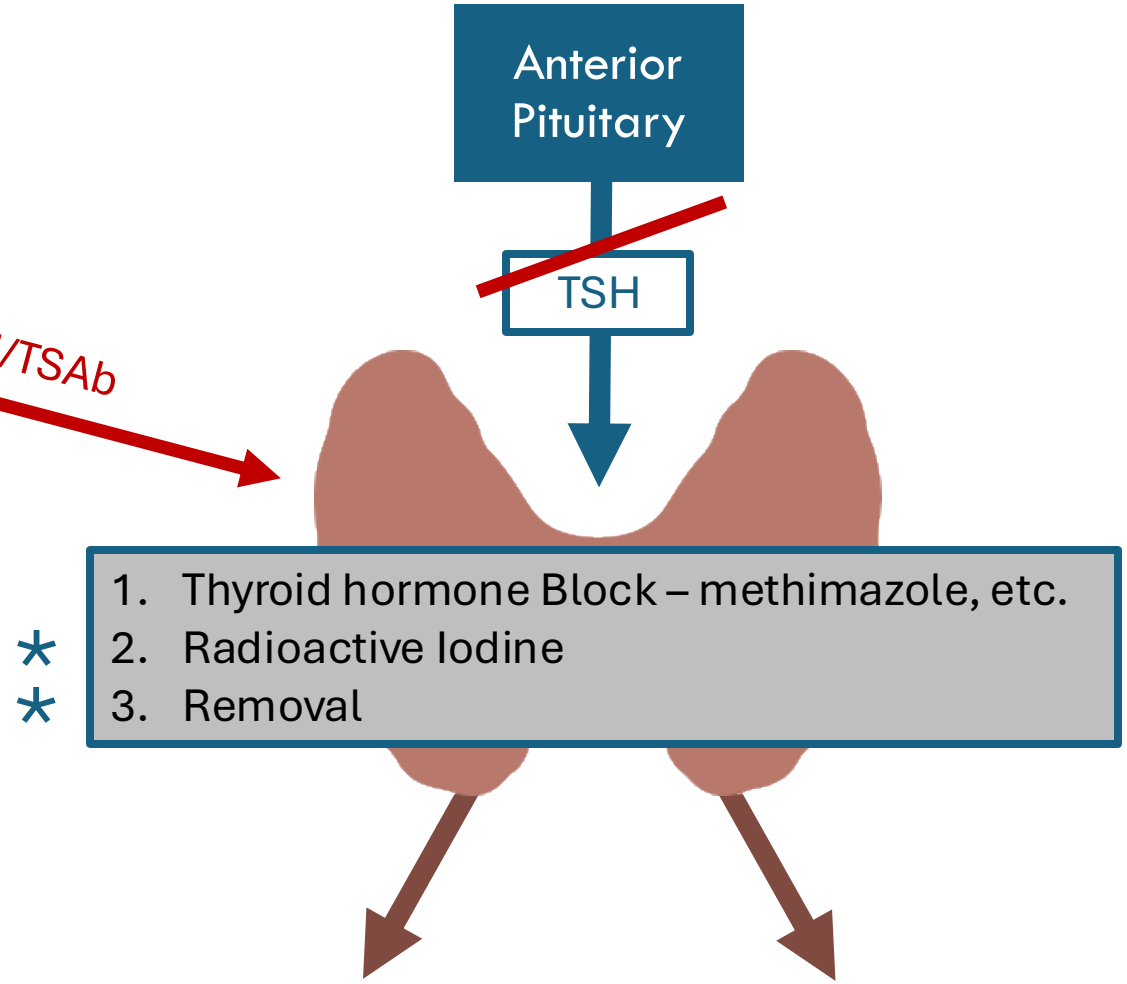
AI Hyperthyroidism
Thyroid Block



AI Hyperthyroid



TSI/TSAb



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*

TSH: LOW
T4: HIGH
T3: HIGH

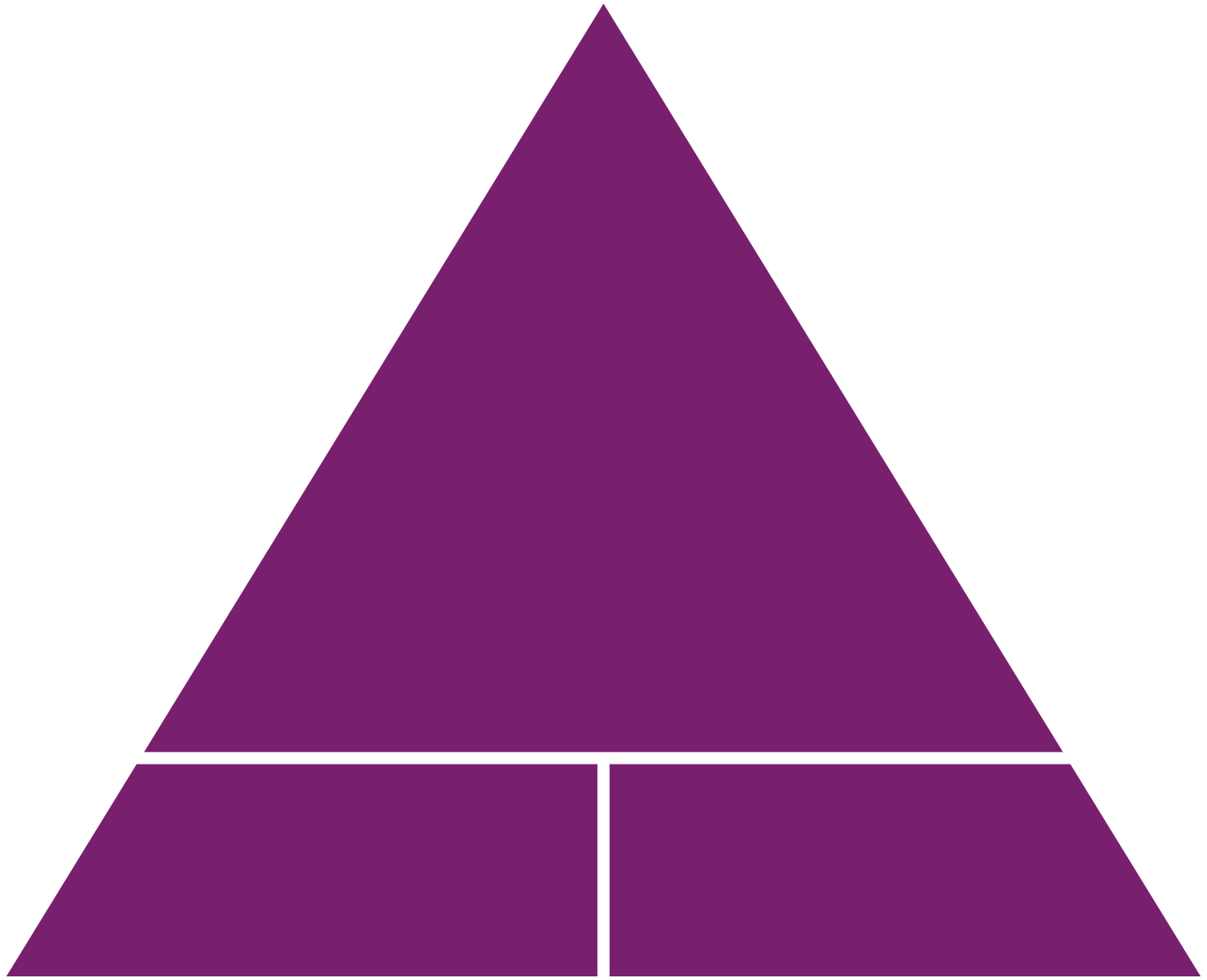
++ ++

*Medication

Biogenetix

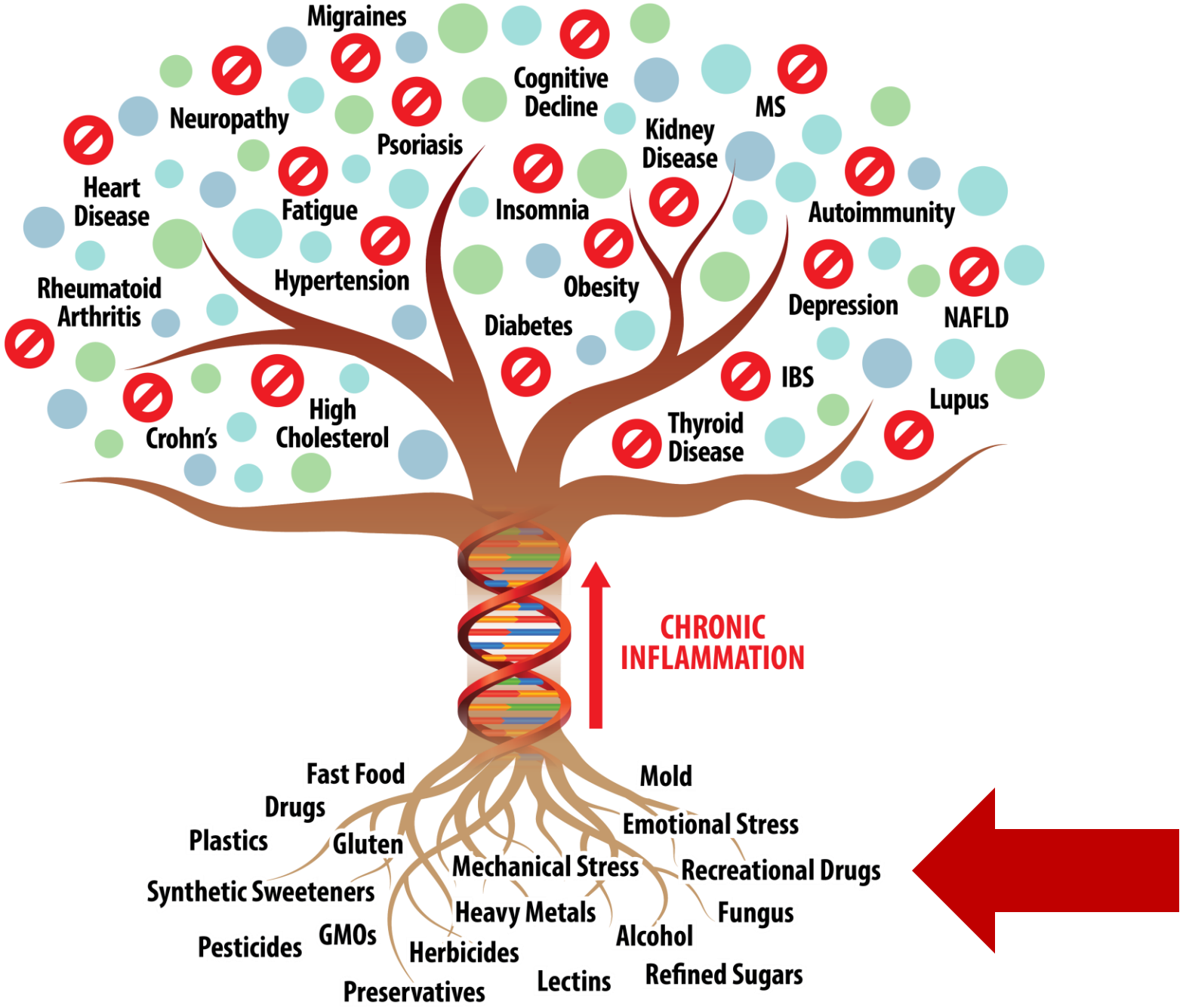
AI Hyperthyroidism
Radiate/Remove
+Medicate

INFLAMMATION



T4/T3

TSH


Migraines
Neuropathy
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Cognitive Decline
MS
Kidney Disease
Heart Disease
Fatigue
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Autoimmunity
Rheumatoid Arthritis
Hypertension
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High Cholesterol
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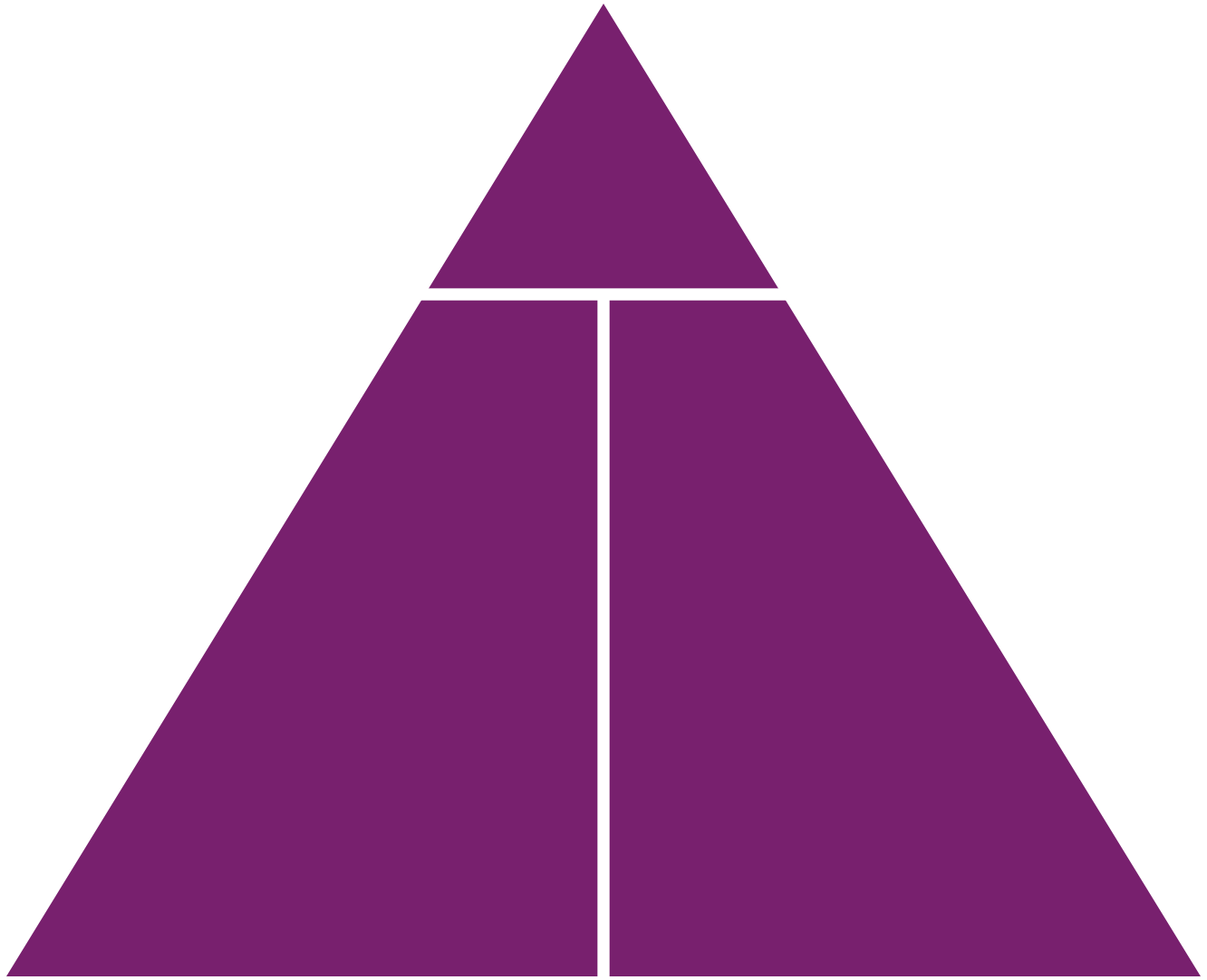
Fungus
Pesticides
GMOs
Herbicides
Alcohol
Preservatives
Lectins
Refined Sugars

Biogenetix

AI Hyperthyroidism
Block/Radiate/Remove
+Medicate
*Lifestyle Intervention



Reach out to your Biogenetix Rep.

Submit your case to the CC team

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